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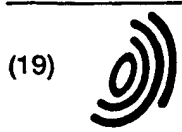
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• Bryant, Jerry W.  
Rochester, NY 14612 (US)  
• Kumar, Ajay  
Fairport, NY 14450 (US)

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(71) Applicant: Xerox Corporation  
Rochester, New York 14644 (US)

(72) Inventors:  
• Damji, Dhirendra C.  
Webster, NY 14580 (US)

(74) Representative:  
Grünecker, Kinkeldey,  
Stockmair & Schwanhäusser  
Anwaltssozietät  
Maximilianstrasse 58  
80538 München (DE)

(54) Pin charge corotron with optimum dimensions for minimum ozone production

(57) A charging apparatus (76) for applying a uniform electrostatic charge to a charge retentive surface is provided. The apparatus includes a housing and an array of pin electrodes (346) supported by the housing and positioned adjacent the surface in a non-contact relationship. The apparatus also includes a generally U shaped shield (312) connected to the housing and at least partially surrounding the array of pin electrodes. The apparatus also includes a grid (336) positioned across distal ends of the shield. The grid (336) defines an effective charge length and an effective grid width. The apparatus also includes a power supply operatively coupled to the pin electrodes for supplying a predetermined current to each of the pin electrode. The power supply provides a predetermined voltage to the grid. At least one of the magnitude of the current, the magnitude of the voltage, the effective charge length, and the effective grid width being selected so as to optimize the charge uniformity, to minimize the sensitivity to photoreceptor grid sensitivity, and to minimize the ozone generated within the charging apparatus.

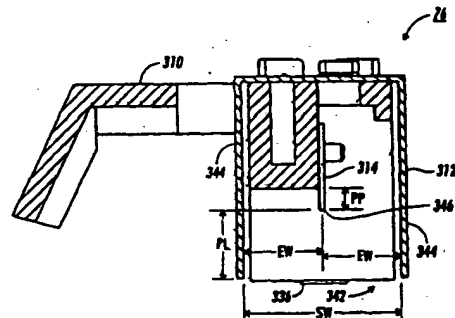


FIG. 8

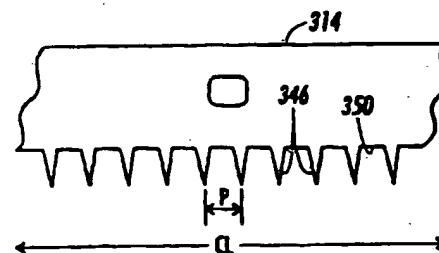


FIG. 9

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# EUROPEAN SEARCH REPORT

Application Number  
EP 98 12 1377

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 758 104 A (SHARP KK) 12 February 1997 (1997-02-12) * page 14, line 37 - page 14, line 56; figure 1 *	1-5,7-10	G03G15/02 H01T19/04
A	—	6	
X	US 5 666 605 A (TOKIMATSU HIROYUKI ET AL) 9 September 1997 (1997-09-09) * column 11, line 37 - column 14, line 41; figures 2,6; table 1 *	1,9,10	
X	US 5 466 938 A (NAKAYAMA YASUNORI ET AL) 14 November 1995 (1995-11-14) * column 7, line 43 - column 9, line 35; figures 1,4,5 *	1,9,10	
A	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 11, 29 November 1996 (1996-11-29) & JP 08 171257 A (MINOLTA CO LTD), 2 July 1996 (1996-07-02) * abstract *	3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G03G H01T
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>7 March 2000</b>	Examiner <b>de Vries, A.</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

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EP 98 12 1377

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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